

ABSTRACT OF THE INVENTION

A method and apparatus is disclosed for determining the range between two planes, ownship (10) and target (12). Model data (66) estimating the velocity and position of target (12) is compared to actual flight path data of the target (12) passively received by ownship (10). The model data (66) and actual data is compared, and an error measurement is calculated. The model data is also subject to position and velocity constraints (78 and 82) which penalize unrealistic estimates. The error measurement and penalties are used to create a perturbation model (90) which is added to the model data to generate new model data. When the model data (66) conforms closely to the actual data, a range is computed from the model data (66).